



PTO/SB/21 (02-04)

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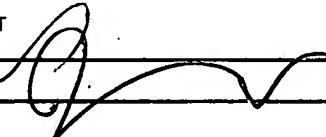
## TRANSMITTAL FORM

*(to be used for all correspondence after initial filing)*

<b>TRANSMITTAL FORM</b> <i>(to be used for all correspondence after initial filing)</i>		Application Number	10/691,353
		Filing Date	October 22, 2003
		First Named Inventor	KRYLIOK et al.
		Art Unit	2879
		Examiner Name	
Total Number of Pages in This Submission		Attorney Docket Number	5853-415

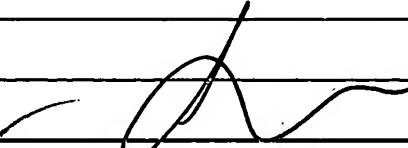
<b>ENCLOSURES</b> <i>(Check all that apply)</i>		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input checked="" type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance communication to Technology Center (TC) <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please Identify below): PTO/SB/08A&B; 14 References; and 1 Postcard.
Remarks		

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Neil R. Jetter AKERMAN SENTERFITT
Signature	
Date	April 28, 2004

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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: KRYLIOUK et al.

Application No.: 10/691,353

Examiner:

Date Filed: October 22, 2003

Group: 2879

For: GAN GROWTH ON SI USING ZNO BUFFER LAYER

CERTIFICATE UNDER 37 CFR 1.8(a)

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Neil R. Jetter

Commissioner for Patents  
Post Office Box 1450  
Alexandria, VA 22313-1450

Date: April 28, 2004

**INFORMATION DISCLOSURE STATEMENT**

Sir:

Pursuant to the Duty to Disclose under 37 C.F.R. §1.56, Applicants hereby disclose information that may be relevant to the Examiner's consideration of the above-identified application and the patentability of its claims.

In accordance with Rules 56, 97, and 98 of the Rules of Practice in Patent Cases (37 C.F.R. §§ 1.56, 1.97, and 1.98), Form PTO/SB/08A&B and copies of references cited therein are submitted for consideration by the Examiner. While the references provided in this Information Disclosure Statement may be material to patentability pursuant to 37 C.F.R. § 1.56, it is not intended to constitute an admission that any reference referred to herein is prior art for this invention unless specially designated as such. Also, in accordance with 37 C.F.R. §1.97(g),

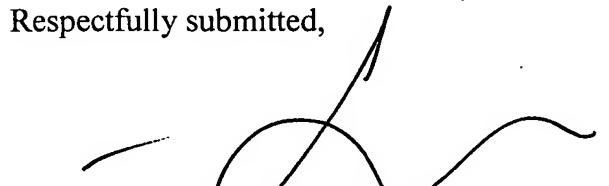
In re Application of: KRYLIOUK et al.  
Application No.: 10/691,353  
Filed: October 22, 2003  
Group Art Unit: 2879  
For: GAN GROWTH ON SI USING ZNO BUFFER LAYER

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the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. § 1.56(a) exists.

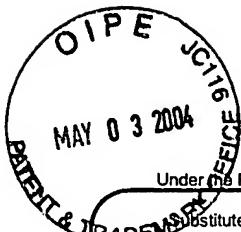
This Information Disclosure Statement is being filed before the issuance of a first office action on the merits of the application (37 C.F.R. 1.97(b)(3)); therefore, no fee is believed to be due. However, if any fee is due, the Commissioner is authorized to charge any such fee and any additional fees due or credit any overpayment to Deposit Account No. 50-0951.

Respectfully submitted,



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Docket No. 5853-415



PTO/SB/08A (08-03)

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## **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

**(Use as many sheets as necessary)**

Sheet 1

of 1

**Complete if Known**

Application Number	10/691,353
Filing Date	October 22, 2003
First Named Inventor	KRYLIOUK et al.
Art Unit	2879
Examiner Name	
Attorney Docket Number	5853-415

## **U. S. PATENT DOCUMENTS**

## **FOREIGN PATENT DOCUMENTS**

Examiner Signature		Date Considered	
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**\*EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449/PTO				<i>Complete if Known</i>	
				Application Number	10/691,353
				Filing Date	October 22, 2003
				First Named Inventor	Kryliouk et al.
				Art Unit	2879
				Examiner Name	
Sheet	1	of	2	Attorney Docket Number	5853-415

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		PEARTON et al., "GaN: Processing, defects, and devices," Journal of Applied Physics, 86:1-78, 1999.	
		PEARTON et al., "Fabrication and performance of GaN electronic devices," Materials Science and Engineering: R: Reports, 30:1-137, 2000.	
		KIM et al., "Growth of high-quality GaN on Si(111) substrate by ultrahigh vacuum chemical vapor deposition," Applied Physics Letters, 78:2858-2860, 2001.	
		KROST et al., "GaN-Based Devices on Si," Phys. Stat. Sol., 194:361-375, 2002.	
		WANG et al., "Growth of hexagonal GaN on Si(111) coated with a thin flat SiC buffer layer," Applied Physics Letters, 77:1846-1848, 2000.	
		ZAMIR, "The effect of AlN buffer layer on GaN grown on (111)-oriented Si substrates by MOCVD," Journal of Crystal Growth, 218:181-190, 2000.	
		UEDA et al., "Vapor phase epitaxy growth of GaN on pulsed laser deposited ZnO buffer layer," Journal of Crystal Growth, 187:340-346, 1998.	
		GU et al., "Role of interfacial compound formation associated with the use of ZnO buffers layers in the hydride vapor phase epitaxy of GaN," Applied Physics Letters, 76:3454-3456, 2000.	
		MOLNAR et al., "Growth of gallium nitride by hydride vapor-phase epitaxy," Journal of Crystal Growth, 178:147-156, 1997.	
		DETCHPROHM et al., "Hydride vapor phase epitaxial growth of a high quality GaN film using a ZnO buffer layer," Appl. Phys. Lett., 61:2688-2690, 1992.	

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.  
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				Application Number	10/691,353
				Filing Date	October 22, 2003
				First Named Inventor	Kryliouk et al.
				Art Unit	2879
				Examiner Name	
Sheet	2	of	2	Attorney Docket Number	5853-415

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		STRITTMATTER et al., "LP-MOCVD growth of GaN on silicon substrates-comparison between AlAs and ZnO nucleation layers," Materials Science and Engineering, 59:29-32, 1999.	
		LEE et al., "The Application of a Low Temperature GaN Buffer Layer to Thick GaN Film Growth on ZnO/Si Substrate," Phys. Stat. Sol., 176:583-587, 1999.	
		DEHOFF, R., "Thermodynamics in Materials Science," McGraw Hill, 326-327, 1993.	
		MOLNAR et al., "GALLIUM NITRIDE THICK FILMS GROWN BY HYDRIDE VAPOR PHASE EPITAXY," Mat. Res. Soc. Symp., 423:221-226, 1996.	

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